

09/862,941

01AB077

**REMARKS**

Claims 1-52 are currently pending in the subject application and are presently under consideration. Claim 1 has been amended herein, and a listing of the pending claims is found at pages 2-9. Favorable reconsideration of the subject patent application is respectfully requested in view of the comments herein.

**I. Rejection of Claims 1-7, 13-28, 30-34, 38-46 and 48-52 Under 35 U.S.C. §102(e)**

Claims 1-7, 13-28, 30-34, 38-46 and 48-52 stand rejected under 35 U.S.C. §102(e) as being anticipated by Voth, *et al.* (US Patent No. 6,199,169). It is respectfully submitted that this rejection should be withdrawn for at least the following reasons. Voth, *et al.* does not teach or suggest each and every element of applicants' invention as set forth in the subject claims.

A single prior art reference anticipates a patent claim only if it expressly or inherently describes *each and every limitation set forth in the patent claim*. *Trintec Industries, Inc., v. Top-U.S.A. Corp.*, 295 F.3d 1292, 63 U.S.P.Q.2D 1597 (Fed. Cir. 2002); *See Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ 2d 1051, 1053 (Fed. Cir. 1987) (emphasis added). *The identical invention must be shown in as complete detail as is contained in the ... claim*. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989) (emphasis added).

The invention as claimed relates to industrial controls and to an apparatus and system for multi-chassis configurable time synchronization. The Examiner asserts that Voth, *et al.* discloses *a processor interface for interfacing the synchronization apparatus with a host processor*, as recited in independent claim 1 and, similarly, in independent claims 38, 39 and 52. It is readily apparent, however, as will be described in more detail below, that the cited reference nowhere discloses, teaches, or suggests the aforementioned novel aspect of applicants' invention. Voth, *et al.* relates to a method of time synchronization in a computer cluster. Individual nodes in the cluster can be a wide range of computer system types, including personal computers, workstations, and mainframes. (*See* col. 4, ln. 9-11). However, at a minimum, each node must be a general-purpose computer of sufficient sophistication to run a UNIX or a UNIX-like operating system, interpret and perform operating system calls, exchange time stamp

09/862,941

01AB077

information, and, in the case of the master node, calculate the differences between the time stamps, as well as all the other functions contemplated. Hence, the method of synchronization is *performed by a computer at each node*. It follows that, even under the broadest possible interpretation, Voth, *et al.* only discloses *a computer capable of performing synchronization*, not *a processor interface for interfacing the synchronization apparatus with a host processor* as claimed.

It is also readily apparent that, because Voth, *et al.* requires sophisticated, general-purpose computers necessary to implement a computer cluster, the addition of a synchronization apparatus to computers that are in themselves capable of performing synchronization *via a different method*, would be counterintuitive. Therefore, it would neither be obvious to one skilled in the art to make such a modification, nor would there be any motivation to do so. Hence, Voth, *et al.* does not teach or suggest the subject invention because it fails to describe each and every element set forth in the claim, and there is no motivation to modify it to do so.

Furthermore, the cited reference fails to disclose, teach, or suggest *a transmitter adapted to transmit synchronization information and data to a network in the control system* as recited in independent claims 38, 39, and 52. A *control system*, as described in the specification, can include primitive or highly specialized controllers, and these components can be arranged in a variety of topologies such as star, daisy-chain, and loop configurations, as well as combinations thereof. (See pg. 4, ln. 24-26). In contrast, Voth, *et al.* relates to a method for time synchronization in a *computer cluster* of sophisticated or general purpose computers, wherein all slave nodes are connected directly to, and communicate directly with a single master node, which precludes topologies such as a daisy-chain and loop configurations. (See col. 16, ln. 12-13; Fig. 1). A *control system* is significantly distinct from a computer cluster such that the cited art is neither suggested to apply to a control system, nor would it be operable (*e.g.* incompatible controllers and topologies).

Additionally, independent claim 1 (and similarly independent claims 38, 39 and 52) recites: *a transmitter adapted to transmit synchronization information and data to a network in the control system; and a receiver adapted to receive synchronization information and data from the network*. Importantly, as claimed, the messages exchanged between the modules include data as well as synchronization information. The information and data exchanged can include a variety of types, such as time stamps, offset information, periodic tones, and both direct

09/862,941

01AB077

data and multiplexed data arriving in frames and temporarily buffered. The subject invention provides a system wherein many time related control operations can be performed. Voth, *et al.* exchanges only synchronization information, not data used for purposes other than absolute time synchronization.

In view of at least the above, it is apparent Voth, *et al.* does not disclose, teach, or suggest the subject invention as described in independent claims 1, 38, 39 and 52 as well as in claims 2-7, 13-28, 30-34, 39-46 and 48-51 which, respectively, depend thereupon either directly or indirectly. Therefore, this rejection should be withdrawn.

## **II. Rejection of Claims 8-12 Under 35 U.S.C. §103(a)**

Claims 8-12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Voth, *et al.* (US Patent No. 6,199,169) in view of Ramussen, *et al.* (US Patent No. 6,449,732). Withdrawal of the rejection is respectfully requested because neither Voth, *et al.* nor Ramussen, *et al.*, either alone or in combination with one another, teaches or suggests the applicants' claimed invention.

Claims 8-12 depend directly or indirectly upon independent claim 1. As noted *supra*, the cited references do not teach or suggest applicants' invention recited in the subject claims. Ramussen, *et al.* fails to make up for the aforementioned deficiencies of Voth, *et al.* with respect to independent claim 1. Thus, this rejection should be withdrawn.

## **III. Rejection of Claims 29, 35-37 and 47 Under 35 U.S.C. §103(a)**

Claims 29, 35-37 and 47 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Voth, *et al.* (US Patent No. 6,199,169) in view of Kuribayashi, *et al.* (US Patent No. 6,775,246). Withdrawal of the rejection is respectfully requested for at least the following reasons. Neither Voth, *et al.* nor Kuribayashi, *et al.* teach or suggest the applicants' claimed invention alone or in combination with one another.

Claims 29, 35-37 depend directly or indirectly upon independent claim 1 while claim 47 depends directly or indirectly upon independent claim 39. As noted *supra*, the Voth, *et al.* fails to teach or suggest applicants' invention as recited in the subject claims. Kuribayashi, *et al.* fails to make up for the aforementioned deficiencies of Voth, *et al.* with respect to independent claims 1 and 39. Thus, this rejection should be withdrawn.

09/862,941

01AB077

Conclusion

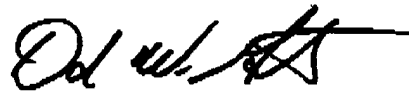
The present application is believed to be in condition for allowance in view of the above comments. A prompt action to such end is earnestly solicited.

In the event any fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063.

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact applicants' undersigned representative at the telephone number below.

Respectfully submitted,

AMIN & TUROCY, LLP



David W. Grillo

Reg. No. 52,970

AMIN & TUROCY, LLP  
24<sup>TH</sup> Floor, National City Center  
1900 E. 9<sup>TH</sup> Street  
Cleveland, Ohio 44114  
Telephone (216) 696-8730  
Facsimile (216) 696-8731